

United States Patent [19]

Okabe

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[54] RE-TRANSMISSION METHOD AND APPARATUS IN COMMUNICATION SYSTEM USING PUBLIC COMMUNICATION LINES

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| [58] Field of Search | 379/93, 100; 358/28 | |
| | 358/305; 178/1, 2 R, 3, 4, 4, 1 | |

[56] References Cited

U.S. PATENT DOCUMENTS

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|-----------|---------|----------------------|-------|
| 4,471,489 | 9/1984 | Konetski et al. | 379/ |
| 4,595,951 | 6/1986 | Filiman | 358/1 |
| 4,710,951 | 12/1987 | Hezono | 379/1 |

U.S. PATENT DOCUMENTS

4,471,489 9/1984 Konetski et al. 379/93
 4,595,951 6/1986 Filliman 358/147
 4,710,951 12/1987 Hezono 379/100

FOREIGN PATENT DOCUMENTS

62257561 7/1985 Japan .

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[57] ABSTRACT

In a communication system having an automatic transmission/reception function to perform data communication.

cations through telephone lines associated with teletex systems, facsimile systems and the like, re-transmission operations are performed when an addressee called for communications is busy (calling) or when communications is interrupted after an addressee has responded. In the re-transmission operation, a response from an addressee is detected and decided as to whether the response is automatically originated from a communication unit or originated by a person. When the latter response is detected, a wrong telephoning is decided and restrictions are placed on the re-transmission operation to thereby minimize trouble given to the addressee. On the condition that a wrong telephoning and a communication failure transmission operation are decided, the addressor station sequentially reduces the calling time or response waiting time in the communication system for each of re-transmission operations following the communication failure transmission operation, and on the condition that a response is received but no negotiation is settled within a predetermined period of time whereby a wrong telephoning and a communication failure transmission operation are decided, the addressor station inhibits communication operations following the communication failure transmission operation when time runs within a midnight discount time zone and permits the communication operations, inclusive of the initial transmission operation, to be performed twice when time runs outside the midnight discount time zone.

13 Claims, 7 Drawing Sheets

